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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/709,435 | 05/05/2004 | Atsushi MINE | 040191 | 3434 |

23850 7590 04/19/2005

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP
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EXAMINER

CHAN, EMILY Y

ART UNIT PAPER NUMBER

2829

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | |
|-----------------|--------------|--|
| Application No. | Applicant(s) | |
| 10/709,435 | MINE ET AL. | |
| Examiner | Art Unit | |
| Emily Y. Chan | 2829 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al US Patent No. 6,680,536.

Regarding to claim 1, Hattori et al ('536) expressly disclose a probe card (probe unit)(see Fig.2D) as claimed, comprising:

a base plate (1) and

a probe (see Fig. 1C) being a member in a shape of a half circle arc, formed on and supported at one end thereof by a surface of the base plate (1) , and having a top portion (6) located at almost the center of the probe serving as a contact surface for contacting with an electrode of a measurement objective (see Col. 5, lines 45-46, and Col. 6, lines 23-27) wherein the probe has a first quarter circle arc portion (3 or the left side of the top portion 6) which is supported at one end (2) thereof by the base plate (1) and a second quarter circle arc portion (see Fig. 1D , 3 or the right portion of the top portion 6) which is connected to the other end of the first quarter circle arc portion (3) and shorter than the first quarter circle arc portion (3) and the top portion (6) of the probe is brought into contact with the measurement objective (17) and is elastically

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deformed (see Col. 4, lines 59-65 " proper elasticity when the piece is abutted on an electrode to be inspected" and see Fig. 6A, 6B).

Hattori et al ('536) do not specify that their second quarter circle arc portion (3 or the right portion of the top portion 6) is a little shorter than the first quarter circle arc portion (3 or the left side of the top portion 6) and do not disclose that the distal end of the second quarter arc portion is brought into contact with the base plate (1) when the top portion (6) is brought into contact with the measurement objective (17).

However, since Hattori et al ('536) clearly disclose that "the position, shape and length of each resilient contact piece 3 maybe changed in various ways" (see Col. 4, lines 14-16), and disclose that " the resilient contact 3 is curved toward the substrate at a proper elasticity" (see Col. 4, lines 60-61), it would have been obvious to one skilled in the art that elastically deforming the probe and lengthening the second quarter circle (3 or the right portion of the top portion 6) to be a little shorter than the first quarter circle (3 or the left side of the top portion 6) in order not to damage the electrode to be inspected would have been within the scope of Hattori et al ('536)'s invention.

Regarding to claim 2, Hattori et al ('536) disclose that a projected contact terminal (small projection 6) is provided at the top portion thereof.

Regarding to claim 3, Hattori et al ('536) disclose that the distal end portion of the second quarter circle arc portion is spherical (see Figs 6A-6B and Col. 7, lines 46-53).

Regarding to claim 4, Hattori et al ('536) disclose coating on the probe lead (2) and the small projection (6) of the their probe (see Col. 10, lines 12-15 and 64) which

meets the claimed coating applied on the distal end surface of the distal end portion of the second quarter circle arc portion.

Regarding to claim 5, Hattori et al ('536) disclose material necessary for raising a Young's modulus (see Col. 13, lines 11-13 "metal to be plated probe may be nickel or nickel alloy ... which gives proper rigidity and elasticity to each lead").

Regarding to claim 7, Hattori et al ('536) disclose coating (insulated surface) is applied on a portion of a surface of the base plate (1) in contact with the distal end surface of the second quarter circle arc portion (see Col.8, lines 66-67).

Regarding to claim 8,, Hattori et al ('536) disclose that a reinforcing member (see Fig. 10D, 9) with elasticity higher (see Col. 8, lines 60-63 " low melting point") than the probe is provided integrally with the probe on a surface thereof facing the base plate (1) along the length direction (see Col. 12, lines 26-37).

Regarding to claim 9, Hattori et al ('536) disclose that a reinforcing member (see Fig. 10D, 9) with elasticity higher (see Col. 8, lines 60-63 " low melting point") than the probe is provided between the base plate (1) and a surface of the probe on the other side thereof from the top portion (6) thereof.

Response to Arguments

2. Applicant's arguments filed 1/31/05 have been fully considered but they are not persuasive. Applicant has argued, for amended independent claim 1, that the reference (Hattori et al US Patent No. 6,680,536) does not describe, teach, or suggest the following features of claim 1, as amended: "A probe card comprising: a base plate; and a probe ... formed on and supported at one end thereof by a surface of the base plate

and having a top portion located at almost the center of the probe serving as a contact surface for contacting with an electrode of a measurement objective wherein ... the top portion of the probe is brought into contact with the measurement objective and elastically deformed and thereby a distal end of said second quarter arc portion is brought into contact with said base plate". With respect to the argument above, the examiner disagrees with this assertion and the examiner's position is stated above (see page 3, paragraph 2).

Response to Amendment

3. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y. Chan whose telephone number is 571-272-1956. The examiner can normally be reached on 8:30-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EC
4-17-05


VINH NGUYEN
PRIMARY EXAMINER
A.U. 2829
04/18/05